Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1   **Claim 1 (previously presented):**   A method for the
2   determination of an acoustic impedance Z, comprising the
3   steps of
4   - arranging a probe with a means for acoustic
5   stimulation and a microphone at the area to be
6   measured;
7   - sending out acoustic signals over said means and
8   receiving again over the microphone;
9   - transforming the received signals by the microphone
10   into electrical signals for input to an analysis
11   unit, in which the amount of the impedance Z will
12   be determined;
13   - inputting a previously defined stimulation into a
14   twoport chain transfer matrix as a calculation
15   base for the impedance Z,
16   - wherein the voltage ratio between the stimulation
17   and the impedance is described as a dimensionless
18   transfer function in a form of a complex function
19   of the stimulation frequency;
20   - generating a series of acoustic calibration signals
21   by a number of known acoustic impedances covering
22   different calibration scopes by means of the
23   defined stimulation;
24   - recording the calibration signals received by the
25   microphone and merging the electric values

26   together with the respective voltage values of

27   the stimulation for the evaluation of the results

28   of the respective transfer functions;

29 - merging together the transfer functions of the

30   calibration signals into a an over-determined

31   linear system of equations and solving the system

32   of equations for calculating two coefficients;

33   and

34 - determining the impedance Z, calculated by

35   evaluating the transfer function under the

36   defined stimulation by use of the two

37   coefficients.

1   **Claim 2 (original):** Method of claim 1 wherein a

2   loudspeaker is used as a mean for the acoustic stimulation.

1   **Claim 3 (original):** Method of claim 1 wherein the

2   over determined linear system will be solved in terms of

3   minimum squares.

1   **Claim 4 (original):** Method of claim 1 wherein at

2   least two different impedances are used.

1   **Claim 5 (previously presented):** Method of claim 1

2   wherein a combination of hollow bodies and small tubes with

3   defined dimensions and known impedances are used as

4   calibrating impedances.

1   **Claim 6 (previously presented):** Method of claim 1

2   wherein a frequency generator is used for the stimulation

3   by generating a broad band signal of white noise.

1   **Claim 7 (original):** Method of claim 1 wherein the

2   transfer functions will be calculated by the division of

3   the measured auto power spectrum of the stimulation through

4   the average cross power spectrum between stimulation and

5   impedance to be measured.

1   **Claim 8 (previously presented):** Method of claim 1

2   wherein two series connected twoport chain matrices are

3   used, wherein the microphone is arranged between the output

4   of the first twoport and the input of the second twoport.

1   **Claim 9 (previously presented):** Method of claim 8

2   wherein the elements of the two chain matrices are reduced

3   to three base parameters, which are evaluated by

4   measurements of at least three calibration impedances with

5   known impedances and the respective solution of the over

6   determined linear system of equations to further determine

7   the impedance to be measured by measuring of the transfer

8   function as a division between the stimulation and the

9   microphone signal by use of the base parameters.

1   **Claim 10 (previously presented):** Method of claim 9

2   wherein the linear system of equations will be solved in

3   terms of minimum squares.

1   **Claim 11 (previously presented):** Method of claim 1

2   wherein an acoustic resistor is arranged between the

3   stimulation and the microphone.

1   **Claim 12 (previously presented):** Method of claim 11

2   wherein the sensitivity of acoustic resistor is optimized

3   with respect to microphone errors.

1   **Claim 13 (previously presented):** Method of claim 1

2   wherein a frequency and/or impedance specific weighting of

3   the linear systems of equation is performed.

1   **Claim 14 (previously presented):** A method for the

2   determination of the acoustic impedance of cavities, such

3   as an ear in connection with a hearing aid, comprising the

4   steps of

5   - arranging a probe with a microphone and a speaker at

6   the area to be measured;

7   - sending out acoustic signals over the speaker into

8   the cavity and receiving again over the

9   microphone;

10   - transforming the received signals by the microphone

11   into electrical signals and transferring them to

12   an analysis unit;

13   - using a previously defined stimulation input to a

14   twoport chain transfer matrix as a calculation

15   base for the impedance Z,

16   - wherein the voltage ratio between the stimulation

17   and the impedance is described as a dimensionless

18   transfer function in a form of a complex function

19   of the stimulation frequency;

20   - generating a series of acoustic calibration signals

21   by a number of known acoustic impedances covering

22   different calibration scopes by means of the

23   defined stimulation;

24   - recording the calibration signals received by the

25   microphone and merging the electric values

26   together with the respective voltage values of

27   the stimulation for the an evaluation of the

28   results of the respective transfer functions;

29   - merging together the transfer functions of the

30   calibration signals into an over-determined

31   linear system of equations and solving the system

32   of equations for calculating and storing two

33   coefficients; and

34   - determining the impedance Z to be calculated by

35   evaluating the transfer function by use of the

36   two coefficients.

1   **Claim 15 (previously presented):**   Method of claim 14

2   wherein two series connected twoport chain matrices are

3   used, and wherein the microphone is arranged between the

4   output of the first twoport and the input of the second

5   twoport.

Claim 16 (canceled).

1   **Claim 17 (currently amended):** <u>An apparatus for the</u>

2   <u>determination of an acoustic impedance comprising a probe,</u>

3   <u>a microphone, a speaker, and an acoustic resistor, wherein</u>

4   <u>said microphone is connected to said speaker via a channel,</u>

5   <u>and wherein said channel has an exit opening with said</u>

6   <u>acoustic resistor between said speaker and said exit</u>

7   <u>opening,</u> ~~Apparatus of claim 16~~ wherein a connecting channel

8   is built up within the probe between the speaker and the

9   microphone, leading subsequently to the microphone into an

10   adapter, which is arranged in an unlockable fashion with a

11   housing of the probe.

1   **Claim 18 (previously presented):**   Method of claim 1

2   for measuring the impedances of hearing devices, part

3 systems of hearing devices, shells of hearing devices, and

4 vents of hearing devices.

1 **Claim 19 (previously presented):** Method of claim 14

2 for measuring the impedances of hearing devices, part

3 systems of hearing devices, shells of hearing devices, and

4 vents of hearing devices.

1 **Claim 20 (original):** Method of claim 1 for measuring

2 the impedances in the field of quality control, preferably

3 the quality control of hearing device transducers, porous

4 bodies, membranes and textiles.

1 **Claim 21 (previously presented):** Method of claim 14

2 for measuring the impedances in the fields of quality

3 control of hearing device transducers, porous bodies,

4 membranes, and textiles.

1 **Claim 22 (currently amended)** Apparatus of claim 17 16

2 for the measuring of the impedances of hearing devices,

3 part systems of hearing devices, shells of hearing devices,

4 and vents of hearing devices.

1   **Claim 23 (previously presented):** Apparatus of claim

2   17 for the measuring of the impedances of hearing devices,

3   part systems of hearing devices, shells of hearing devices,

4   and vents of hearing devices.

1   **Claim 24 (currently amended):** <u>An apparatus for the</u>

2   <u>determination of an acoustic impedance comprising a probe,</u>

3   <u>a microphone, a speaker, and an acoustic resistor, wherein</u>

4   <u>said microphone is connected to said speaker via a channel,</u>

5   <u>and wherein said channel has an exit opening with said</u>

6   <u>acoustic resistor between said speaker and said exit</u>

7   <u>opening,</u> ~~Apparatus of claim 16~~ for measuring the impedances

8   in the field of quality control of hearing device

9   transducers, porous bodies, membranes, and textiles.

1   **Claim 25 (previously presented):** Apparatus of claim

2   17 for measuring the impedances in the field of quality

3   control of hearing device transducers, porous bodies,

4   membranes, and textiles.

1   **Claim 26 (currently amended):** An apparatus for the

2   determination of an acoustic impedance Z comprising:

3   a probe;

4   a microphone;

5   a speaker;

6   an acoustic resistor arranged between the speaker and

7 an exit opening within a connecting channel connecting to

8 one of the microphone and an exit of the probe; and

9   an analysis unit for receiving electrical signals from

10 the microphone, and for determining an impedance Z, wherein

11   a series of acoustic calibration signals of a number

12 of known acoustic impedances covering different calibration

13 scopes are generated by means of a predefined stimulation

14 for output by the probe for reception by the microphone,

15 and wherein

16   the analysis unit comprises a function for solving an

17 over-determined linear system of equations in terms of

18 minimum squares by use of at least three of said acoustic

19 calibration signals.